Author’s response to reviews

Title: Determinants of overweight with concurrent stunting among Ghanaian children

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The Editor

BMC Pediatrics

Re: “Determinants of overweight with concurrent stunting among Ghanaian children” (Manuscript ID BPED-D-16-00021R1).

Dear Editor,

We thank you for the opportunity to resubmit our manuscript. We are also grateful to the reviewers for the useful comments, which we have diligently addressed. In revising the manuscript, we have carefully considered all the concerns and suggestions offered. In addition to the point-by-point response to the comments from the two reviewers, we have highlighted all essential changes in blue font.

It is our hope that the revisions meet your standards and that the paper would be published in your Journal. We look forward to working with you towards a final published product.

Sincerely,

Amos Laar, PhD

On behalf of co-authors
Point-by-point responses to queries

Reviewer 1

Reviewer reports:

Nassib Bueno (Reviewer 1): The study describes a cross-sectional analysis of 7550 children (< 5 years) and sought to determine the prevalence of concurrent overweight and stunting in the same children, and the factors associated with it. The sample size and the sampling approach are the strengths of the study, but the data analysis and discussion could be greatly improved. Conclusions should be modified in order to be fully backed-up by the data.

Major comments

Style and language: I believe the paper would greatly improve with a review in style and language.

Response

We have painstakingly copy-edited the manuscript. We do believe the style, language and readability of the current version of the manuscript is acceptable.

Comment

Statistical analysis: the model that the authors chose to analyze their data (i.e., using pre-established p-values in order to include variables in the multivariate model) may not be the most interesting one in this particular case. I would suggest using a hierarchical analysis (Victora CG et al. The role of conceptual frameworks in epidemiological analysis: a hierarchical approach. Int J Epidemiol. 1997;26(1):224-7) or maybe use a more restrictive p-value as inclusion criteria (such as 10%), considering that the study has enough power (due to its sample size) to detect significant associations.

Response

Statistical analysis: Although it is not wrong, the use of odds-ratio in cross-sectional studies is rather unintuitive. There are several alternative approaches (Barros AJ, Hirakata VN. Alternatives for logistic regression in cross-sectional studies: an empirical comparison of models that directly estimate the prevalence ratio. BMC Medical Research Methodology. 2003;3:21. doi:10.1186/1471-2288-3-21.) Poisson regression may be conducted in SPSS (generalized linear models, using "Poisson log-linear" in "type of model", "robust estimator" in the "Estimation" tab, and "exponential parameters" in "Statistics"). As Poisson regression yields prevalence rates, it is easier to interpret and understand (and also show more conservative effect sizes for the associations).

Response

The bivariate and multivariable analysis were done again using the Poison regression modelling approach as suggested by the reviewer due to its intuitiveness and ease of interpretation. Results are therefore interpreted via prevalence rates ratios instead of the odds ratios.

Comment

Results: The authors state that the odds of girls being DBM was higher than the odds of boys. Nevertheless, the confidence interval associated with the OR does not indicate statistical significance. The same issue is repeated in line 45, where the authors report the aOR, and the associated confidence interval (which does not indicate significant difference).

Response

The above sentence was revised. “Although not reaching statistical significance, the prevalence ratio of overweight with concurrent stunting was lower among girls compared to their male counterparts (PR = 0.754; 95% CI, 0.495 – 1.149).” Please see lines 304-306

Comment

Results: As there was no trending proved in wealth index analysis, the discussion and conclusions regarding it should be waived. What is the possible explanation to the fact that the fourth quintile had higher odds but the richest quintile did not?

Response

Comment
Discussion: The authors spent some time discussing non-significant data such as age and sex, which I believe should not have such emphasis. On the other hand, some significant data such as marital status was not mentioned in the discussion.

Response

We have revised the discussion section to include less of sex and age due to their statistical non-significance as pointed out the reviewer.

Comment

Discussion: The discussion is repeating several data from the results. Authors should consider reviewing it. In some cases, such as in the last paragraph of "contextual determinants" there is data that was not even showed in the results section (rural vs urban origin).

Response

Thank you. We have addressed this comment by moving results that appeared in the discussion to the results section. Only key findings are retained in the discussion section.

Comment

Table 3: It is not clear why the shaded variables were excluded from the adjusted analysis. Breastfeeding status was significant associated with DBM and there is no mention at all regarding it in the results/discussion. In addition, actual p-values should be reported for each variable, in order to the reader be able to verify which variables were included in the "adjusted analysis". Ideally, the authors should report (in addition with the p-values), somewhere in the text, which variables composed the adjusted model.

Response

The shaded portions as was in the previous submission have been deleted from this current manuscript. Some of the current tabulations do not contain p-values (e.g. Tables 2 – 4); PRs and aPRs with their correspong 95% CI are included. Significance of variables are indicated with asterisks (*)..

Minor comments

Comment
Abstract - line 13: Instead of "bivariate level analysis" I believe that "multivariate analysis" would be more suitable. I would "bivariate" instead of "univariate".

Response

This has been revised accordingly

Comment

Abstract - In the methodology, I suggest using "alpha value was set to 5%" instead of "P < 0.05 was used..."

Response

Changed to " An alpha value of 5% was used to indicate significance of variables. “instead of "P < 0.05 was used...”

Comment

Background: several typos (line 10-11).

Response

Typos corrected accordingly

Comment

Background: missing comma (line 27)

Response

Comment

Page 5, line 13: replace the semi-colon by a colon.

Response

The whole sentence has been moved to Measurement of Nutritional Status section in page 5 and semi-colon replaced with colon.
Comment
Page 6, line 6: "stunting" is missing in the sentence.
Response
Stunting is included in the sentence

Comment
Page 7: it says that moderate stunting was diagnosed when HAZ was between 2.00SD and 3.00SD. I believe it is missing a negative "-" value.
Response
Corrections have been made to HAZ values accordingly

Comment
Page 7, Line 27: was two asterisk (**) used to denote something?
Response
Yes! It has been added to the sentence.

Comment
Page 7, line 40: I do not think it is necessary to state this equation.
Response
Equation removed from manuscript

Comment
Page 8, Line 50: There is a typo in the 95%CI of the aOR from wealth quintile.
Response
Unable to identify what the problem is here – odd ratios changed to rate ratios due to the model used.

Comment

General comment: it seems like the authors use both "double burden of malnutrition" and "overweight with concurrent stunting" to denote the same issue. I believe it would be more adequate to use only one throughout the text, in terms of consistency.

Response

Double burden of malnutrition in the manuscript changed to overweight and concurrent stunting for uniformity.

Comment

Page 9, line 1: double burden of malnutrition was already defined and should be "DBM".

Response

Comment

Page 10, Line 17: LBW has not been defined by the authors.

Response

Defined as Low Birth Weight (LBW) infants….in the sentence

Comment

Page 10, Line 38 and 47: Several typos.

Response

All such typos in the manuscript have been corrected

Comment
Page 9 and discussion in general: I don't think that the use of "[14]" such as in the following phrase "Similarly, [14] study using Demographic Health Survey (DHS) data from Eastern, Middle, Southern, and Western Africa also revealed evident prevalence of DBM[...]" is adequate. Ideally, it should report the name of the author and then, the number of the reference.

Response

In text citations have been corrected accordingly

Comment

Table 3. The footnote is somewhat unclear. Using shade patterns does not seem adequate. Maybe using "-" would be sufficient. Still, it is not clear from where the values of log-likelihood and R² are from coming from.

Response

In the revised manuscript, the shaded portions have been deleted.

Comment

Throughout the text: There are several typos similar to the abovementioned ones.

Response

The manuscript has been language edited and typos corrected.

REVIEWER 2

Daniel Hoffman (Reviewer 2): This is an interesting secondary analysis of nutritional status and the co-existence of stunting and overweight in Ghana. The authors have written a generally good manuscript that requires extensive revisions before being considered for publication.

Specific comments are:

Comment

The Introduction and Discussion need thorough editing to ensure that the writing conforms to other published work. In short, the Introduction does not flow well and there is no real sense of
the rationale for conducting the study. What is the gap in the literature this paper will fill? Why did the authors conduct the study? Simply because the dataset was available? The authors need to revise the writing to make it more clear and tell a compelling story as to why the study was done and the importance of this study.

Response

The affected sections of the manuscript have been revised accordingly. Thank you.

Comment

There are many typos and minor grammatical errors that should be addressed.

Response

We have corrected all typos that were identified in the manuscript as also pointed out by the reviewer.

Comment

For example, Pg 3 L 10-11 has "now now canoriginate" that should be "now can originate"

Response

"now now canoriginate" corrected to read "now can originate"

Comment

Pg 6 L 21-25 should be one complete paragraph

Response

The manuscript has been reformatted and the paragraphs moved to separate subheadings

Comment

pg 9 L 34 delete "our data show"

Response

"our data show" deleted
Comment

Pg 10 Please use spaces between all headings and subheadings

Response

Space between headings and subheadings have been introduced as suggested

Comment

Pg 10 L 28-34 This entire paragraph does not make sense.

Response

It has been revised accordingly so show the clearly indicate the strength and weaknesses of the manuscript

Comment

The Discussion needs to be fully revised to be clearer and make better sense. The authors are advised to work with a scientific editor to improve the writing.

Response

There is a revision on the discussion section. Manuscript has been language edited also.